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Date Printed: 07/06/2011	Released: 02/16/2011 Rev. Num: 4.0
Approved By: Robin Smith	

Marijuana (cannabis) Analysis

1. Purpose and Scope

These tests are used to identify marijuana and its primary active ingredients-tetrahydrocannabinol (THC), a Schedule I substance under RIGL Controlled Substance Act.

2. Definitions

GC/MS	Gas Chromatograph/Mass Spectrometer
TLC	Thin layer chromatography

3. Safety Instructions

Chemical Hazard

4. Instructions

1. Inventory the evidence and weigh (if requested).
2. Add appropriate amount of plant material (up to one gram) to a test tube.
Refer to Sample Plan (PRO-FC-01).
3. Perform Microscopic Examination.
Use stereomicroscope to observe sample. Look for "bear claw" cystolithic hairs and seeds (coconut shaped and veined).
4. Perform Thin Layer Chromatography.
Prepare THC standard:

-THC stock is purchased at 27mg/mL in methanol. Dilute to 10mL in methanol. This is the intermediate standard. Take 0.5uL of the intermediate standard and dilute to 10mL in methanol. This is the working standard.

Prepare Fast Blue B Salt Locating Reagent:

-To 35mL ethanol (absolute) and 15mL distilled water, add Fast Blue salt until solution turns pink (1-2 small scoops). Store in refrigerator. (Shelf life 1 year)

Add enough petroleum ether to the test tube to cover the sample and vortex.

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Instructions (Continued)

Spot THC standard next to samples along the bottom of the TLC sheet using disposable capillary tubes.

Place TLC sheet in developing tank and allow solvent front to travel up the sheet (developing tank solution:

100mL hexane/10mL diethylamine).

When the solvent front nears the top of the sheet, remove the sheet and let air dry.

Spray the sheet with Fast Blue B Salt Reagent.

Compare standard and sample spots.

5. Perform Duquenois-Levine Color Test

Prepare Duquenois reagent:

-Add 8 grams vanillin to 400mL ethanol (absolute) and 5mL acetaldehyde. Store in refrigerator. (Shelf life 1 year)

Pour petroleum ether extract into glass vial and evaporate on a hot plate.

Add 1mL Duquenois reagent and 1mL concentrated hydrochloric acid.

Observe color of solution (should be blue/purple). Add enough chloroform to form two layers (approximately 2ml - 5ml of chloroform).

Observe color of chloroform layer (should be violet/purple).

A blue to violet-blue color reaction indicates the presence of cannabinoids.

5. Notes

If fresh leaves or a plant is submitted, the leaves must be dried before analysis by TLC, Duquenois and/or GC/MS. This is done in an oven, preferably overnight.

6. FC-Instruments/Equipment/Materials

Capillary Tubes

Hot Plate

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FC-Instruments/Equipment/Materials (Continued)

Stereoscope

TLC Sheet

Vortex

7. FC-Chemicals/Reagents

No fc-chemicals/reagents are identified for this instruction.

8. Records

Drug Chemistry Checklist

FORM-FC-01

9. Policy References

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10. Procedure References

Sample Plan

PRO-FC-01

11. Instruction References

No instructions are referenced by this instruction.

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12. Other Reference Documents

There are no other reference documents for this instruction.
